

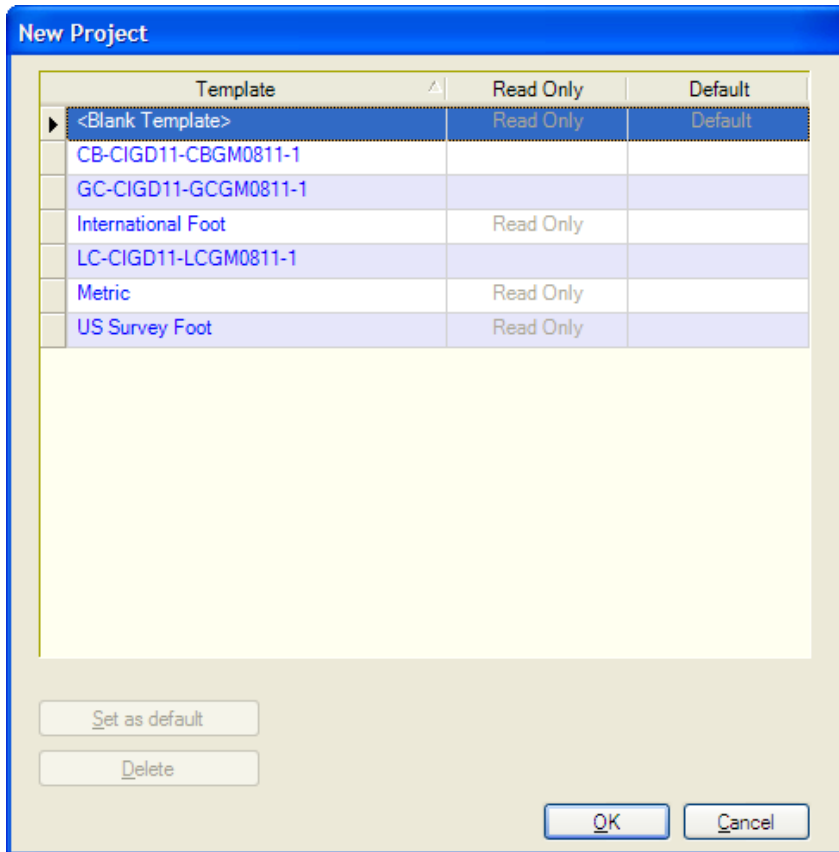
**TBC job template:**

As with TGO set up, geoid model ggf files and the current.csd file are required in the folder C:\Program Files\Common Files\Trimble\GeoData or equivalent.

If a site calibration is saved using the “Save as Site” option then the site details are automatically stored in the current.csd file. Only one current.csd can be referenced by TGO or TBC. **Rename or back up the existing current.csd file to prevent over writing.**

The TBC project template files e.g. GC-CIGD11-GCGM0811-1.vct and should be copied to the directory listed in TBC under Tools > Options > File Locations > Template Folder

As with TGO when opening a new job the three templates should appear in the available list as below.



These template jobs contain the CIGD11 positions of all the CORS and the new transformations. They are equivalent to the old GC7P job originally provided when GPS was first introduced. They contain no Site calibration but include the respective geoid model for each island.

Open a new project using the newly created template.

If observations computed in jobs based on this template are compared to jobs computed using the GC7P template (no site calibrations) then the same observed point will have different Global Lat Long Hts, the same Local Lat Long Hts and the same Easting Northings (the northing is 0.01ft different). The observed elevation will also be different, the elevation from the new template being a ground elevation interpolated from the geoid model.

When starting a new job in CIGD11 this template job can be used to create the new job project in TBC before uploading to the Survey Controller.

The survey controller will also require the geoid model ggf files uploading to the Trimble Data folder.

LCSB

The screenshot shows a 'Properties' dialog box for a point named 'LCSB'. The dialog is organized into several sections, each with a collapsed header:

- Point Information:**

Point ID:	LCSB
Feature code:	
Layer:	Points
- Grid Coordinate:**

Easting:	1955907.288	▲
Northing:	7135162.661	▲
Elevation:	33.290	▲
- Local Coordinate:**

Latitude:	19.667324727	▲
Longitude:	-80.082685248	▲
Height:	-26.700	▲
- Global Coordinate:**

Latitude (Global):	19.667560258	▲
Longitude (Global):	-80.082085302	▲
Height (Global):	-26.700	▲

At the bottom of the dialog is a 'Close' button.

CBMD

The screenshot shows a 'Properties' dialog box for a 'Point CBMD'. The dialog is organized into several sections:

- Point Information:**
  - Point ID: CBMD
  - Feature code: (empty)
  - Layer: Points
- Grid Coordinate:**
  - Easting: 2067106.257
  - Northing: 7161437.055
  - Elevation: 119.754
- Local Coordinate:**
  - Latitude: 19.737742379
  - Longitude: -79.758853089
  - Height: 61.573
- Global Coordinate:**
  - Latitude (Global): 19.737976114
  - Longitude (Global): -79.758256429
  - Height (Global): 61.572

A 'Close' button is located at the bottom right of the dialog.

GCFS

The screenshot shows a 'Properties' dialog box for a point named 'GCFS'. The dialog is organized into several sections, each with a minus sign icon to the left of the title. The 'Point Information' section contains fields for Point ID, Feature code, and Layer. The 'Grid Coordinate' section contains fields for Northing, Easting, and Elevation. The 'Local Coordinate' section contains fields for Latitude, Longitude, and Height. The 'Global Coordinate' section contains fields for Latitude (Global), Longitude (Global), and Height (Global). Each coordinate field has a small icon to its right, likely for unit conversion or display options. A 'Close' button is located at the bottom right of the dialog.

Point Information	
Point ID:	GCFS
Feature code:	
Layer:	Points

Grid Coordinate	
Northing:	7005624.227
Easting:	1576892.027
Elevation:	14.573

Local Coordinate	
Latitude:	N19.312736121
Longitude:	W81.184318707
Height:	14.892

Global Coordinate	
Latitude (Global):	N19.312862009
Longitude (Global):	W81.183532709
Height (Global):	-35.275

GCEA

The screenshot shows a 'Properties' dialog box for a point named 'GCEA'. The dialog is organized into several sections, each with a collapsed header:

- Point Information:**

Point ID:	GCEA
Feature code:	
Layer:	Points
- Grid Coordinate:**

Northing:	6998527.236	▲
Easting:	1509842.523	▲
Elevation:	100.801	▲
- Local Coordinate:**

Latitude:	N19.292885987	▲
Longitude:	W81.378807518	▲
Height:	100.614	▲
- Global Coordinate:**

Latitude (Global):	N19.293020011	▲
Longitude (Global):	W81.378023098	▲
Height (Global):	52.640	▲

At the bottom of the dialog is a 'Close' button.

CBSB

The screenshot shows a 'Properties' dialog box for a 'Point' feature named 'CBSB'. The dialog is organized into several sections:

- Point Information:**
  - Point ID: CBSB
  - Feature code: (empty)
  - Layer: Points
- Grid Coordinate:**
  - Easting: 2041454.585
  - Northing: 7151825.645
  - Elevation: 34.241
- Local Coordinate:**
  - Latitude: 19.711773580
  - Longitude: -79.833648950
  - Height: -23.485
- Global Coordinate:**
  - Latitude (Global): 19.712008461
  - Longitude (Global): -79.833051414
  - Height (Global): -23.484

A 'Close' button is located at the bottom right of the dialog.

GCGT

The screenshot shows a 'Properties' dialog box for a point named 'GCGT'. The dialog is organized into several sections:

- Point Information:**
  - Point ID: GCGT
  - Feature code:
  - Layer: Points
- Grid Coordinate:**
  - Northing: 6998502.334
  - Easting: 1509351.519
  - Elevation: 75.778
- Local Coordinate:**
  - Latitude: N19.292814429
  - Longitude: W81.380231749
  - Height: 75.570
- Global Coordinate:**
  - Latitude (Global): N19.292948506
  - Longitude (Global): W81.379447339
  - Height (Global): 27.611

A 'Close' button is located at the bottom right of the dialog.



**To reuse old site calibrations with out re-observing:**

This method is the same general procedure as for TGO. The old job with the old site calibration observations is required. Open this and export a Trimble Data Exchange File (TDEF) .asc file and print off the original site calibration report.

Open a new project based on the new template and import the .asc file. Calculate the new site calibration in the new job. Pick the same point pairs as previously and set the same options for horizontal, vertical, ignore. Calculate and print the report.

When comparing the two reports the observed global lat long hts will be different but everything else should be almost identical. If the geoid model is used instead of a vertical calibration then the residuals and final elevations will be different but should be acceptable. See examples below.

The new project containing the new site calibration can be saved and uploaded to the TSC.

Old System Calibration Results:

Project information		Coordinate System	
Name:	S:\Grand Cayman Survey\Control\2006-2008-GeodeticCampaign\GPS\CIGD11\Cailbration Tests\TBC\TBCorigCalib.vce	Name:	Site
Size:	2 MB	Datum:	GC7P GC7P-
Modified:	7/27/2010 12:07:37 PM	Zone:	NAD83(CORS96)-GC59
Reference number:		Geoid:	
Description:		Vertical datum:	

**Additional Coordinate System Details**

Local Site Settings			
Project latitude:	?	Ground scale factor:	1
Project longitude:	?	False northing offset:	0.00 ft
Project height:	10.00 ft	False easting offset:	0.00 ft

**Site Calibration Report**

**Horizontal Calibration Parameters**

<b>Translation north:</b>	0.01 ft
<b>Translation east:</b>	0.01 ft
<b>Rotation:</b>	0°00'00"
<b>Origin northing:</b>	7016645.28 ft
<b>Origin easting:</b>	1509964.58 ft
<b>Scale factor:</b>	1.0000000000

**Vertical Calibration Parameters**

<b>Vertical shift at origin:</b>	-0.01 ft
<b>Slope north:</b>	-1.416 ppm
<b>Slope east:</b>	-13.669 ppm

**Origin northing:** 7010068.93 ft  
**Origin easting:** 1508626.92 ft

## Residual Differences Between GPS And Known Coordinates

### Summary

	Maximum residual	Root Mean Square residual	Point
<b>Horizontal</b>	0.11 ft	0.09 ft	5E46F1
<b>Vertical</b>	0.02 ft	0.02 ft	GC105F1
<b>Three-dimensional</b>	?	?	

### Point Residuals

**Residuals sign: Calculated-Control!**

GNSS Point		Calculated Point		Grid Point	
<b>Point</b>	5E46F1	<b>Point</b>	5E46F1	<b>Point</b>	5E46
<b>Latitude</b>	N19°20'49.99201"	<b>Northing</b>	7018203.46 ft	<b>Northing</b>	7018203.37 ft
<b>Longitude</b>	W81°22'32.43702"	<b>Easting</b>	1510691.91 ft	<b>Easting</b>	1510691.99 ft
<b>Height</b>	-36.88 ft	<b>Elevation</b>	5.82 ft	<b>Elevation</b>	?
		<b>Horiz. residual</b>	0.11 ft	<b>Type</b>	Horizontal
		<b>Vert. residual</b>	?		
		<b>3D residual</b>	?		
<b>Point</b>	5E50F1	<b>Point</b>	5E50F1	<b>Point</b>	5E50
<b>Latitude</b>	N19°20'25.73496"	<b>Northing</b>	7015760.59 ft	<b>Northing</b>	7015760.59 ft
<b>Longitude</b>	W81°22'48.60949"	<b>Easting</b>	1509138.57 ft	<b>Easting</b>	1509138.47 ft
<b>Height</b>	-38.16 ft	<b>Elevation</b>	4.45 ft	<b>Elevation</b>	4.32 ft
		<b>Horiz. residual</b>	0.10 ft	<b>Type</b>	Horizontal
		<b>Vert. residual</b>	?		
		<b>3D residual</b>	?		
<b>Point</b>	5E5F1	<b>Point</b>	5E5F1	<b>Point</b>	5E5

<b>Latitude</b> N19°19'55.47041" <b>Longitude</b> W81°22'36.90757" <b>Height</b> -40.75 ft	<b>Northing</b> 7012706.15 ft <b>Easting</b> 1510252.18 ft <b>Elevation</b> 1.79 ft <b>Horiz. residual</b> 0.06 ft <b>Vert. residual</b> ? <b>3D residual</b> ?	<b>Northing</b> 7012706.19 ft <b>Easting</b> 1510252.14 ft <b>Elevation</b> 2.07 ft <b>Type</b> Horizontal
<b>Point</b> 5E1F2 <b>Latitude</b> N19°19'45.86697" <b>Longitude</b> W81°22'38.74600" <b>Height</b> -39.04 ft	<b>Point</b> 5E1F2 <b>Northing</b> 7011738.07 ft <b>Easting</b> 1510074.11 ft <b>Elevation</b> 3.47 ft <b>Horiz. residual</b> 0.07 ft <b>Vert. residual</b> ? <b>3D residual</b> ?	<b>Point</b> 5E1 <b>Northing</b> 7011738.11 ft <b>Easting</b> 1510074.16 ft <b>Elevation</b> 3.53 ft <b>Type</b> Horizontal
<b>Point</b> 6F45F1 <b>Latitude</b> N19°19'29.28423" <b>Longitude</b> W81°22'53.82529" <b>Height</b> -38.26 ft	<b>Point</b> 6F45F1 <b>Northing</b> 7010068.91 ft <b>Easting</b> 1508626.91 ft <b>Elevation</b> 4.18 ft <b>Horiz. residual</b> ? <b>Vert. residual</b> -0.02 ft <b>3D residual</b> ?	<b>Point</b> 6F45 <b>Northing</b> 7010068.94 ft <b>Easting</b> 1508627.18 ft <b>Elevation</b> 4.20 ft <b>Type</b> Vertical
<b>Point</b> DK01F1 <b>Latitude</b> N19°21'57.07566" <b>Longitude</b> W81°22'42.55205" <b>Height</b> -38.65 ft	<b>Point</b> DK01F1 <b>Northing</b> 7024970.59 ft <b>Easting</b> 1509738.29 ft <b>Elevation</b> 4.22 ft <b>Horiz. residual</b> ? <b>Vert. residual</b> -0.02 ft <b>3D residual</b> ?	<b>Point</b> DK01 <b>Northing</b> 7024970.15 ft <b>Easting</b> 1509737.92 ft <b>Elevation</b> 4.24 ft <b>Type</b> Vertical

<b>Point</b> PBM88F1 <b>Latitude</b> N19°18'11.50349" <b>Longitude</b> W81°21'33.76481" <b>Height</b> -40.06 ft	<b>Point</b> PBM88F1 <b>Northing</b> 7002208.99 ft <b>Easting</b> 1516275.40 ft <b>Elevation</b> 2.29 ft <b>Horiz. residual</b> ? <b>Vert. residual</b> 0.01 ft <b>3D residual</b> ?	<b>Point</b> PBM88 <b>Northing</b> 7002209.52 ft <b>Easting</b> 1516275.22 ft <b>Elevation</b> 2.28 ft <b>Type</b> Vertical
<b>Point</b> GC105F1 <b>Latitude</b> N19°21'26.36697" <b>Longitude</b> W81°23'12.95689" <b>Height</b> -36.23 ft	<b>Point</b> GC105F1 <b>Northing</b> 7021880.12 ft <b>Easting</b> 1506821.40 ft <b>Elevation</b> 6.52 ft <b>Horiz. residual</b> ? <b>Vert. residual</b> 0.02 ft <b>3D residual</b> ?	<b>Point</b> GC105 <b>Northing</b> 7021879.98 ft <b>Easting</b> 1506821.10 ft <b>Elevation</b> 6.49 ft <b>Type</b> Vertical
<b>Point</b> 5E40F1 <b>Latitude</b> N19°21'09.30410" <b>Longitude</b> W81°22'53.79584" <b>Height</b> -38.45 ft	<b>Point</b> 5E40F1 <b>Northing</b> 7020155.40 ft <b>Easting</b> 1508651.66 ft <b>Elevation</b> 4.28 ft <b>Horiz. residual</b> 0.09 ft <b>Vert. residual</b> ? <b>3D residual</b> ?	<b>Point</b> 5E40 <b>Northing</b> 7020155.32 ft <b>Easting</b> 1508651.71 ft <b>Elevation</b> ? <b>Type</b> Horizontal
<b>Point</b> 5E52F1 <b>Latitude</b> N19°21'20.78432" <b>Longitude</b> W81°22'29.50624" <b>Height</b> -38.67 ft	<b>Point</b> 5E52F1 <b>Northing</b> 7021308.11 ft <b>Easting</b> 1510979.08 ft <b>Elevation</b> 4.13 ft <b>Horiz. residual</b> 0.09 ft <b>Vert. residual</b> ?	<b>Point</b> 5E52 <b>Northing</b> 7021308.19 ft <b>Easting</b> 1510979.06 ft <b>Elevation</b> ? <b>Type</b> Horizontal

	<b>3D residual</b>	?	
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Date: 7/27/2010 12:28:17 PM	Project: S:\Grand Cayman Survey\Control\2006-2008- GeodeticCampaign\GPS\CIGD11\Cailbration Tests\TBC\TBCorigCalib.vce	Trimble Business Center
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New System Calibration Results:

Project information		Coordinate System	
Name:	S:\Grand Cayman Survey\Control\2006-2008-GeodeticCampaign\GPS\CIGD11\Cailbration Tests\TBC\TBCnewCalib.vce	Name:	Cayman Islands
Size:	2 MB	Datum:	CIGD11-GCGD59
Modified:	7/27/2010 12:38:22 PM	Zone:	CIGD11-GCNG59
Reference number:		Geoid:	GCGM0811
Description:		Vertical datum:	

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## Site Calibration Report

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### Horizontal Calibration Parameters

<b>Translation north:</b>	0.00 ft
<b>Translation east:</b>	0.01 ft
<b>Rotation:</b>	0°00'00"
<b>Origin northing:</b>	7016645.30 ft
<b>Origin easting:</b>	1509964.58 ft
<b>Scale factor:</b>	1.0000000000

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### Vertical Calibration Parameters

<b>Vertical shift at origin:</b>	-0.02 ft
<b>Slope north:</b>	-6.136 ppm
<b>Slope east:</b>	2.483 ppm
<b>Origin northing:</b>	7010068.93 ft
<b>Origin easting:</b>	1508626.92 ft

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### Residual Differences Between GPS And Known Coordinates

**Summary**

	Maximum residual	Root Mean Square residual	Point
<b>Horizontal</b>	0.11 ft	0.09 ft	5E46F1
<b>Vertical</b>	0.05 ft	0.03 ft	GC105F1
<b>Three-dimensional</b>	?	?	

**Point Residuals**

Residuals sign: Calculated-Control!

GNSS Point		Calculated Point		Grid Point	
<b>Point</b>	5E46F1	<b>Point</b>	5E46F1	<b>Point</b>	5E46
<b>Latitude</b>	N19°20'50.00335"	<b>Northing</b>	7018203.46 ft	<b>Northing</b>	7018203.37 ft
<b>Longitude</b>	W81°22'32.45199"	<b>Easting</b>	1510691.91 ft	<b>Easting</b>	1510691.99 ft
<b>Height</b>	-42.67 ft	<b>Elevation</b>	5.70 ft	<b>Elevation</b>	?
		<b>Horiz. residual</b>	0.11 ft	<b>Type</b>	Horizontal
		<b>Vert. residual</b>	?		
		<b>3D residual</b>	?		
<b>Point</b>	5E50F1	<b>Point</b>	5E50F1	<b>Point</b>	5E50
<b>Latitude</b>	N19°20'25.74629"	<b>Northing</b>	7015760.59 ft	<b>Northing</b>	7015760.59 ft
<b>Longitude</b>	W81°22'48.62447"	<b>Easting</b>	1509138.57 ft	<b>Easting</b>	1509138.47 ft
<b>Height</b>	-43.95 ft	<b>Elevation</b>	4.38 ft	<b>Elevation</b>	4.32 ft
		<b>Horiz. residual</b>	0.10 ft	<b>Type</b>	Horizontal
		<b>Vert. residual</b>	?		
		<b>3D residual</b>	?		
<b>Point</b>	5E5F1	<b>Point</b>	5E5F1	<b>Point</b>	5E5
<b>Latitude</b>	N19°19'55.48174"	<b>Northing</b>	7012706.15 ft	<b>Northing</b>	7012706.19 ft
<b>Longitude</b>	W81°22'36.92255"	<b>Easting</b>	1510252.18 ft	<b>Easting</b>	1510252.14 ft
<b>Height</b>	-46.55 ft	<b>Elevation</b>	1.70 ft	<b>Elevation</b>	2.07 ft
		<b>Horiz. residual</b>	0.06 ft	<b>Type</b>	Horizontal



	<b>residual</b>		
	<b>Vert. residual</b> ?		
	<b>3D residual</b> ?		
<b>Point</b> 6F45F1	<b>Point</b> 6F45F1	<b>Point</b> 6F45	
<b>Latitude</b> N19°19'29.29555"	<b>Northing</b> 7010068.91	<b>Northing</b> 7010068.94	
<b>Longitude</b> W81°22'53.84027"	ft	ft	
<b>Height</b> -44.05 ft	<b>Easting</b> 1508626.91	<b>Easting</b> 1508627.18	
	ft	ft	
	<b>Elevation</b> 4.17 ft	<b>Elevation</b> 4.20 ft	
	<b>Horiz. residual</b> ?	<b>Type</b> Vertical	
	<b>Vert. residual</b> -0.03 ft		
	<b>3D residual</b> ?		
<b>Point</b> DK01F1	<b>Point</b> DK01F1	<b>Point</b> DK01	
<b>Latitude</b> N19°21'57.08702"	<b>Northing</b> 7024970.59	<b>Northing</b> 7024970.15	
<b>Longitude</b> W81°22'42.56703"	ft	ft	
<b>Height</b> -44.44 ft	<b>Easting</b> 1509738.29	<b>Easting</b> 1509737.92	
	ft	ft	
	<b>Elevation</b> 4.21 ft	<b>Elevation</b> 4.24 ft	
	<b>Horiz. residual</b> ?	<b>Type</b> Vertical	
	<b>Vert. residual</b> -0.03 ft		
	<b>3D residual</b> ?		
<b>Point</b> PBM88F1	<b>Point</b> PBM88F1	<b>Point</b> PBM88	
<b>Latitude</b> N19°18'11.51479"	<b>Northing</b> 7002208.99	<b>Northing</b> 7002209.52	
<b>Longitude</b> W81°21'33.77976"	ft	ft	
<b>Height</b> -45.85 ft	<b>Easting</b> 1516275.40	<b>Easting</b> 1516275.22	
	ft	ft	
	<b>Elevation</b> 2.29 ft	<b>Elevation</b> 2.28 ft	
	<b>Horiz. residual</b> ?	<b>Type</b> Vertical	
	<b>Vert. residual</b> 0.01 ft		
	<b>3D residual</b> ?		
<b>Point</b> GC105F1	<b>Point</b> GC105F1	<b>Point</b> GC105	
<b>Latitude</b> N19°21'26.37832"	<b>Northing</b> 7021880.12	<b>Northing</b> 7021879.98	
<b>Longitude</b> W81°23'12.97188"	ft	ft	
<b>Height</b> -42.02 ft	<b>Easting</b> 1506821.40	<b>Easting</b> 1506821.10	
	ft	ft	

	<b>Elevation</b> 6.54 ft <b>Horiz. residual</b> ? <b>Vert. residual</b> 0.05 ft <b>3D residual</b> ?	<b>Elevation</b> 6.49 ft <b>Type</b> Vertical
<b>Point</b> 5E40F1 <b>Latitude</b> N19°21'09.31544" <b>Longitude</b> W81°22'53.81082" <b>Height</b> -44.24 ft	<b>Point</b> 5E40F1 <b>Northing</b> 7020155.40 ft <b>Easting</b> 1508651.66 ft <b>Elevation</b> 4.22 ft <b>Horiz. residual</b> 0.09 ft <b>Vert. residual</b> ? <b>3D residual</b> ?	<b>Point</b> 5E40 <b>Northing</b> 7020155.32 ft <b>Easting</b> 1508651.71 ft <b>Elevation</b> ? <b>Type</b> Horizontal
<b>Point</b> 5E52F1 <b>Latitude</b> N19°21'20.79567" <b>Longitude</b> W81°22'29.52121" <b>Height</b> -44.46 ft	<b>Point</b> 5E52F1 <b>Northing</b> 7021308.11 ft <b>Easting</b> 1510979.08 ft <b>Elevation</b> 4.03 ft <b>Horiz. residual</b> 0.09 ft <b>Vert. residual</b> ? <b>3D residual</b> ?	<b>Point</b> 5E52 <b>Northing</b> 7021308.19 ft <b>Easting</b> 1510979.06 ft <b>Elevation</b> ? <b>Type</b> Horizontal
<b>Point</b> 5E1F2 <b>Latitude</b> N19°19'45.87829" <b>Longitude</b> W81°22'38.76097" <b>Height</b> -44.84 ft	<b>Point</b> 5E1F2 <b>Northing</b> 7011738.07 ft <b>Easting</b> 1510074.11 ft <b>Elevation</b> 3.39 ft <b>Horiz. residual</b> 0.07 ft <b>Vert. residual</b> ? <b>3D residual</b> ?	<b>Point</b> 5E1 <b>Northing</b> 7011738.11 ft <b>Easting</b> 1510074.16 ft <b>Elevation</b> 3.53 ft <b>Type</b> Horizontal

Date: 7/27/2010  
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Project: S:\Grand Cayman  
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Trimble Business  
 Center

	GeodeticCampaign\GPS\CIGD11\Cailbration Tests\TBC\TBCnewCalib.vce	
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